Dutch is the adult version of German

Freek Van de Velde
KU Leuven

The decline and fall of the inflectional empire

- A few new synthetic forms notwithstanding (for which: Van Haeringen 1950), Germanic and Romance languages witnessed an increased syntactic complexity at the expense of morphological complexity in their histories.

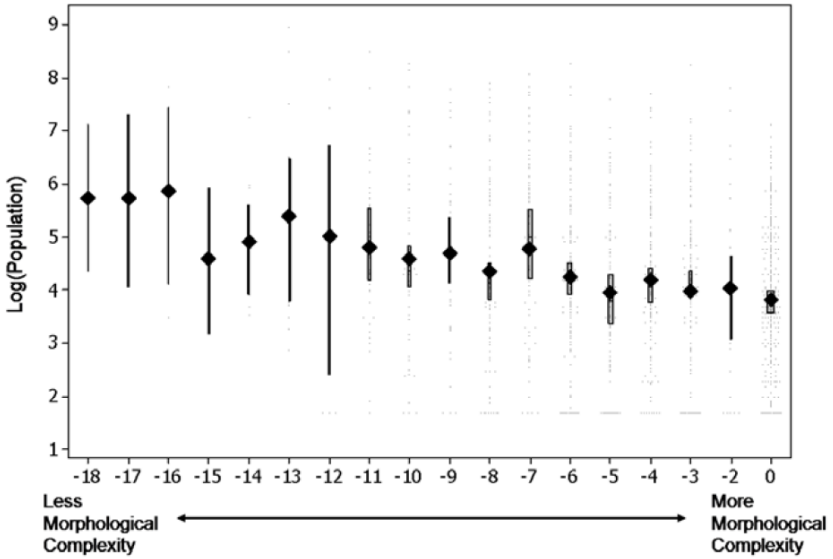
- What happened?

- The adults hijacked the language

Demographic explanations for the analytic-synthetic difference

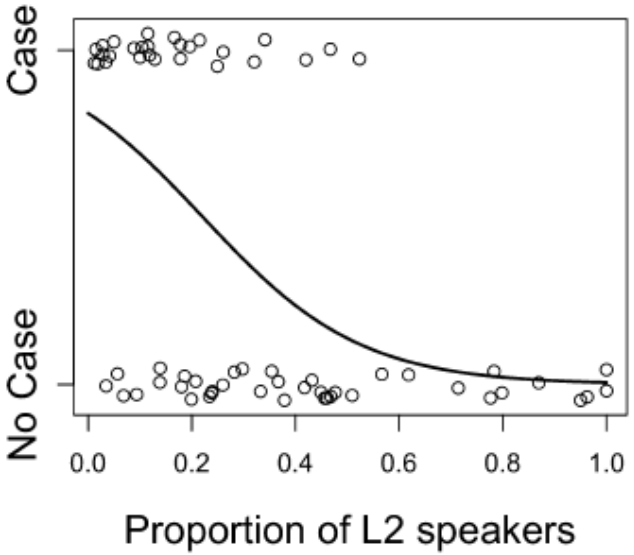
- Lupyan & Dale (2010)
  - Due to evolutionary pressures, languages adapt to their community (see also Christiansen and Chater 2008; Lupyan & Dale 2016)

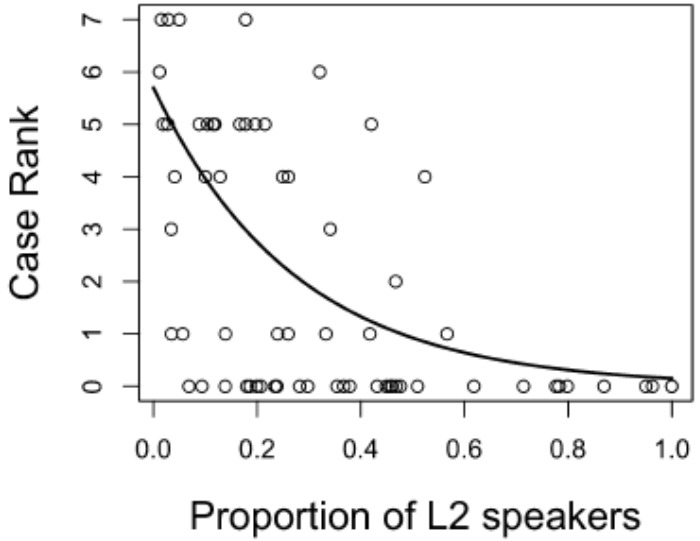
    ⇨ *Linguistic Niche Hypothesis*
  - **Esoteric languages**: morphologic complexity, redundancy, synthetic, favouring L1 acquisition ⇨ smaller languages
  - **Exoteric languages**: analytic-syntactic complexity, transparency, analytic, favouring L2 acquisition ⇨ patterns with bigger languages



⇦ Lupyan & Dale 2010

⇩ Bentz & Winter 2013





Demographic explanations for the analytic-synthetic difference

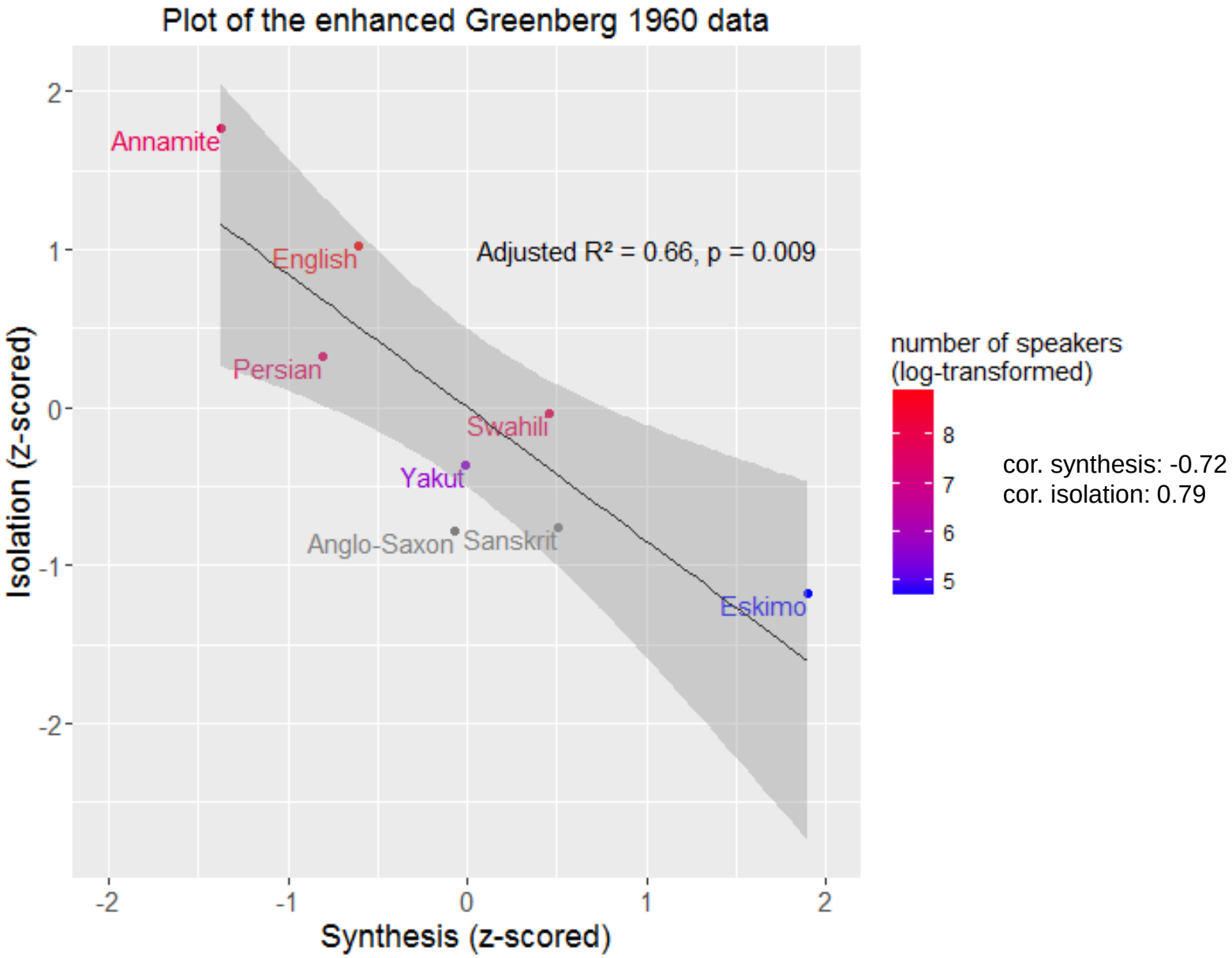
- Lupyan & Dale (2010), Bentz & Winter (2013): synchrony
- What about diachrony? (see Kusters 2003; Szmrecsanyi 2012; Carlier et al. 2012; Haspelmath, forthc.; Haspelmath & Michaelis, forthc.)

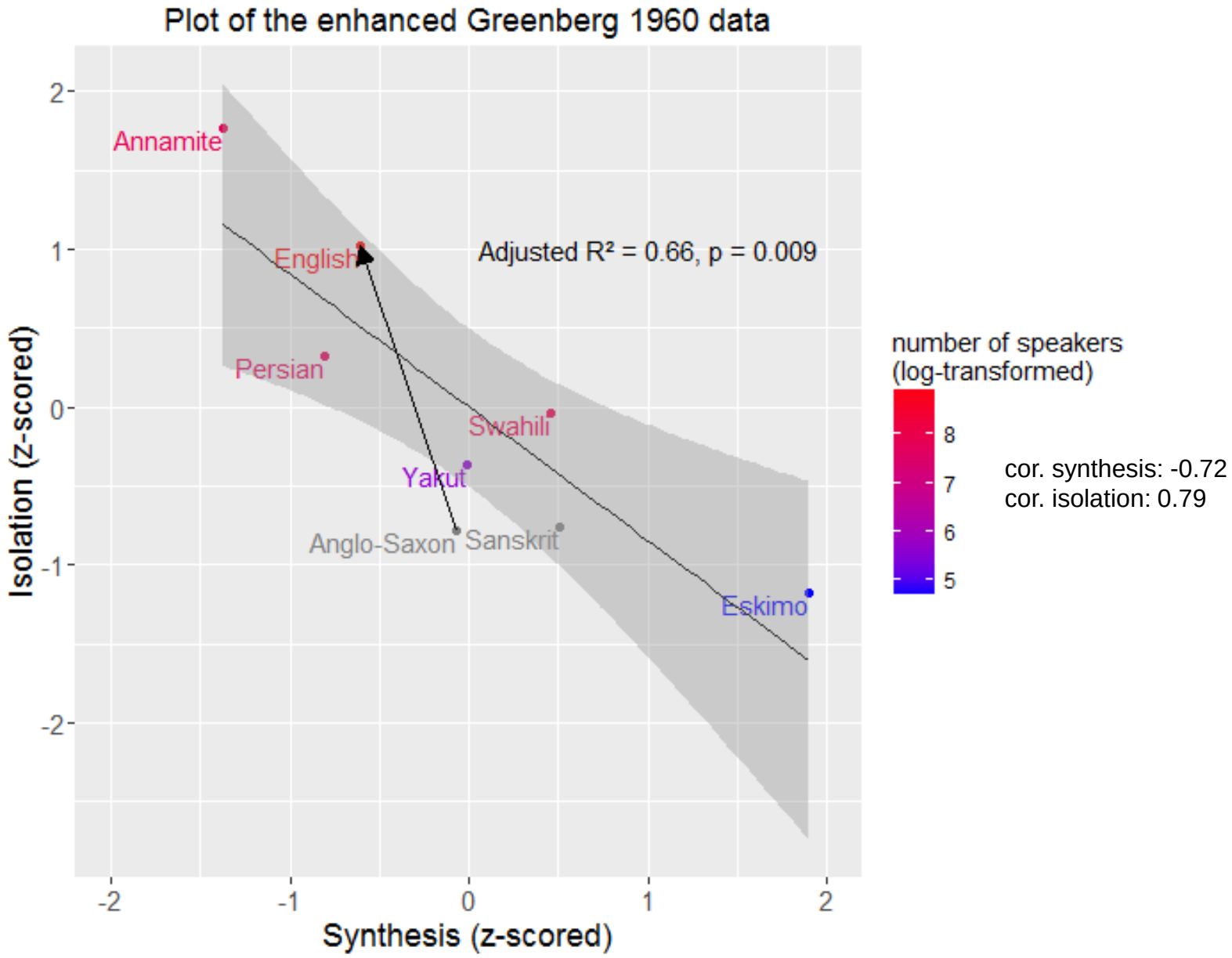
From synchrony to diachrony

Greenberg (1960)

- Index of synthesis (proportion of morphemes to words)
- Index of isolation (proportion of word order as a grammatical marker to the total number of nexus)
- Along with a number of other indices (Index of agglutination, Index of compounding, Index of inflection, Index of prefixation ...).
- Calculated on 100 word stretches of different languages (labour-intensive):

	Sanskrit	Anglo-Saxon	Persian	English	Yakut	Swahili	Annamite	Eskimo
Synthesis	2.59	2.12	1.52	1.68	2.17	2.55	1.06	3.72
Isolation	.16	.15	.52	.75	.29	.40	1.00	.02


Plot of the enhanced Greenberg 1960 data
Annamite
English
Persian
Swahili
Yakut
Anglo-Saxon
Sanskrit
Eskimo
Adjusted R² = 0.66, p = 0.009
Isolation (z-scored)
Synthesis (z-scored)
2
1
0
-1
-2
-2
-1
0
1
2
number of speakers
(log-transformed)
8
7
6
5
cor. synthesis: -0.72
cor. isolation: 0.79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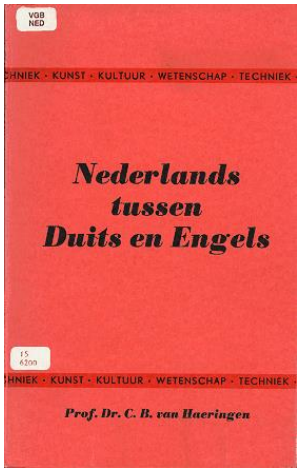
Changes in Romance and Germanic

Germanic:	English	>	Dutch	>	German	(Van Haeringen 1956)
Romance:	French	>	Italian (N > S)	>	Spanish	(Lamiroy & De Mulder 2011)

- In all core areas of morphosyntax:
  - Gender
  - Pronominal case
  - Tense
  - Aspect
  - Mood
  - Person
  - Articles
  - Raising
  - External possessors (Van de Velde & Lamiroy 2017)
  - ...
- Exceptions: exaptations (Van de Velde & Norde 2016)
- Directly or indirectly related to 'deflection' (Van der Horst 2004: 53)



Van Haeringen-patterns

	nominal domain	**verbal domain**
morphology	schwa apocope gender	person aspect tense mood
syntax	articles partitives dative external possessors	raising

Van Haeringen-patterns:
- E > D > G
- ED > G **and** E > DG
- ED > G **or** E > DG = weaker evidence
- EDG = neutral
- other combinations (D>E>G, D>G>E, E>G>D, G>E>D) = counterexamples

Van Haeringen-patterns

- Morphophonology:
  - Schwa apocope in nouns and verbs: English (-/-) < Dutch (-/+) < German (+/+):

	English	**Dutch**	**German**
noun	*sun-Ø*	*zon-Ø*	*Sonn-ə*
verb	*sleep-Ø*	*slap-ə(n)*	*schlaf-ən*

Van Haeringen-patterns

- Gender

English (1, so 0)	**Dutch (2)**	**German (3)**
the day	*de dag*	*der Tag*
the sun	*de zon*	*die Sonne*
the water	*het water*	*das Wasser*

Van Haeringen-patterns

- Person

	English (1)	**Dutch (2)**	**German (4/5)**
Stam	*drink-Ø*	*drink-Ø*	*trink-Ø*
1e enk.	*drink-Ø*	*drink-Ø*	*trink-ə*
2e enk.	*drink-Ø*	*drink-t*	*trink-st*
3e enk.	*drink-s*	*drink-t*	*trink-t*
1e mv.	*drink-Ø*	*drink-ə*	*trink-ən*
2e mv.	*drink-Ø*	*drink-ə*	*trink-t*
3e mv.	*drink-Ø*	*drink-ə*	*trink-ən*

Van Haeringen-patterns

- Aspect:
  - Typical for Germanic languages: loss of morphological aspect (Harbert 2007:272ff.)
  - New aspectual markers: English > Dutch > German
  - Grammaticalisation of the progressive: English > Dutch > German

(1a) *He is being late*

(1b) **Hij is aan het laat zijn*

(2a) *He is being followed*

(2b) ??*Hij is aan het gevolgd worden*

(3a) *Hij is aan het slapen*

(3b) ?*Er ist am Schlafen*

Van Haeringen-patronen

- Mood:
  - Loss of subjunctive (conjunctive, optative): English/Dutch > German
  - Grammaticalisation of modal auxiliaries: English > Dutch/German (see also Mortelmans 2004)
    - Defective paradigm: no person marking or past participle in English

Van Haeringen-patterns

- Articles (Van Haeringen 1956:40; Van de Velde & Lamiroy 2017)

  article vs. demonstrative: English > Dutch > German

  (1a) *Ich bin in einen Jungen verliebt, aber **der** hat eine Freundin*
  (1b) *Ik ben verliefd op een jongen, maar **die/*de** heeft een vriendin*
  (1c) *I have a crush on a boy, but ***that/*the** has a girlfriend*

  German article [definiteness, number, gender, case]
  Dutch article [definiteness, number, gender]
  English article [definiteness]

Van Haeringen-patterns

- (Pseudo-)partitive constructions: English < Dutch < German

(1a) *a bottle* ****Ø/of*** *wine*
(1b) *een fles* ***Ø/*van*** *wijn*
(1c) *eine Flasche* ***Ø/*von*** *Wein*

(2a) *part* ***of*** *the problem*
(2b) *een deel* ***van*** *het probleem*
(2c) *ein Teil* ***des*** *Problems* (currently also with 'von-Fügung')

Van Haeringen-patterns

- Dative external possessors (König & Haspelmath 1998; Lamiroy 2003; König & Gast 2009:112-121; Van de Velde & Lamiroy 2017)

(1a) ***Ihm*** *schmerzt der Bauch*
(1b) **De buik doet* ***hem*** *pijn*
(1c) **The stomach aches* ***him***

(2a) *Er wollte* ***mir*** *die Kehle durchschneiden*
(2b) *Hij wou* ***me*** *de keel oversnijden*
(2c) **He wanted to cut* ***me*** *the throat*

Van Haeringen-patterns

- Verbal syntax:
  - 'Raising': English > Dutch > German (Van der Auwera & Noël 2011)
    - O-to-S raising (*tough*-movement): English (≥ 52) > Dutch (≥ 34) > German (≥ 9)
      1. *It is easy to convince John$_O$.*
      2. *John$_S$ is easy to convince.*
    - S-to-O raising (ACI): English (≥ 40) > Dutch (*vinden*, †*achten*, †*oordelen*, †*bevinden*, †*zeggen*, idiomen: *elk meent zijn uil een valk te zijn,* Flemish dialects) > German (no true ACI)
      1. *I believe that John$_S$ is ill.*
      2. *I believe John$_O$ to be ill.*
    - S-to-S raising (NCI): English (≥ 110) > Dutch (≥ 10) > German (geen NCI)
      1. *It so happened that John$_S$ was ill.*
      2. *John$_S$ happened to be ill.*

Demographic correlates

- Weerman (2006)

	English	Dutch	German
History	+	+	+
Present	-	+/-	+

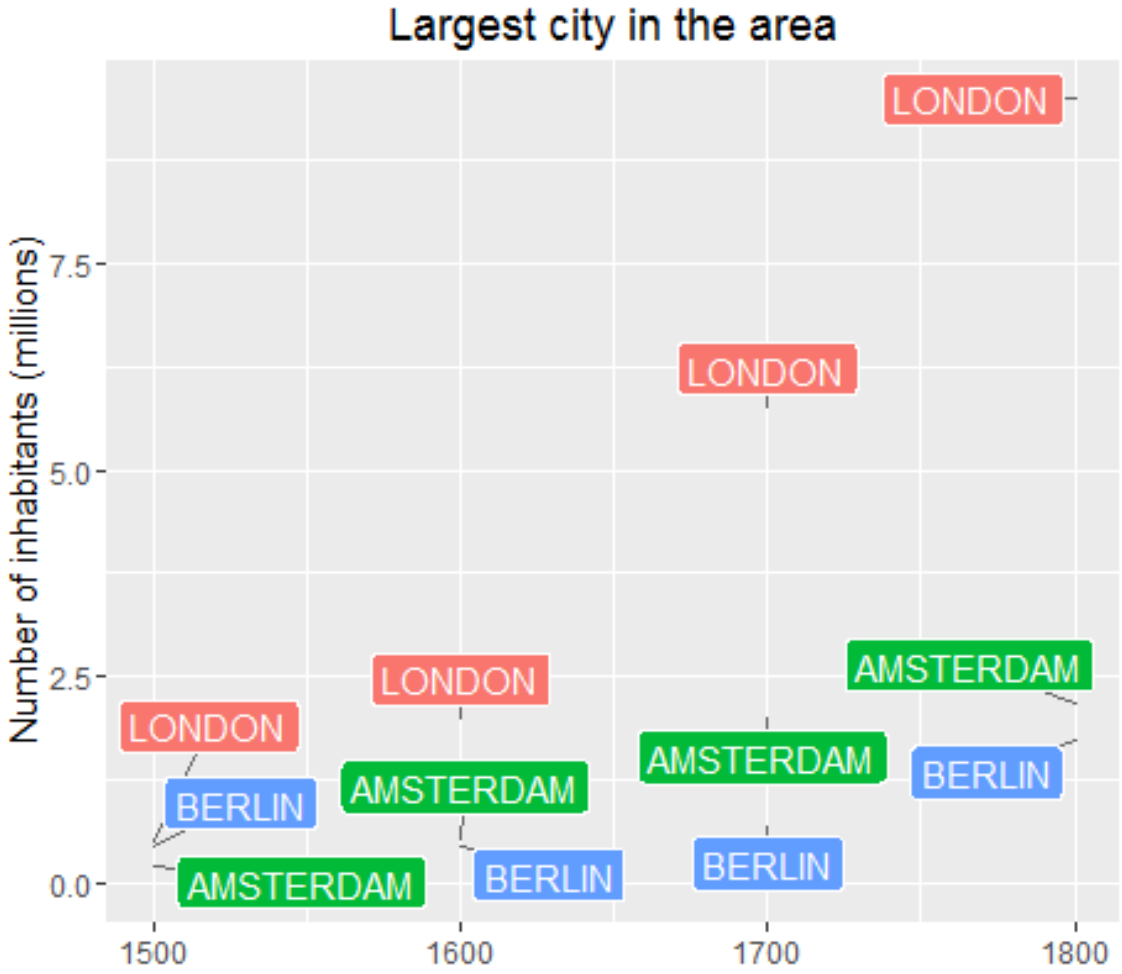
- Can we attribute these changes to demography?
- Historical demography is elusive: no clear data on populations size and migration
- We can work with urbanisation:
  - In pre-industrial times, population growth is too high to be explained solely by natural growth (De Vries 1984:199-266, Howell 2006:208)
  - Migration, leading to koineization (Kerswill 2002), due to an influx of L2 speakers
    - Language diversity was higher in Medieval and Early Modern cities
    - Dialects were often mutually unintelligible

Urbanisation

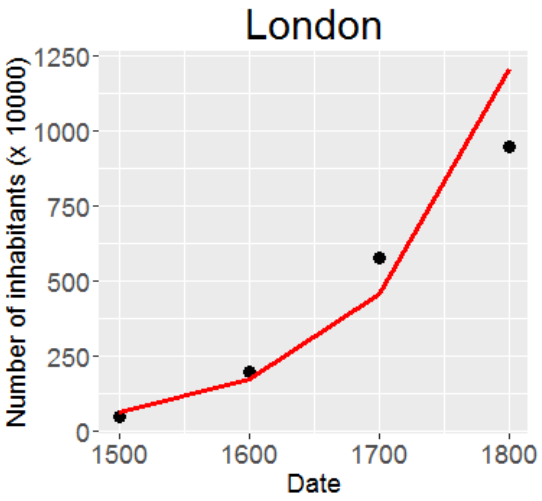
- Do we see more rapid urbanisation in those language areas that analyticise more rapidly?

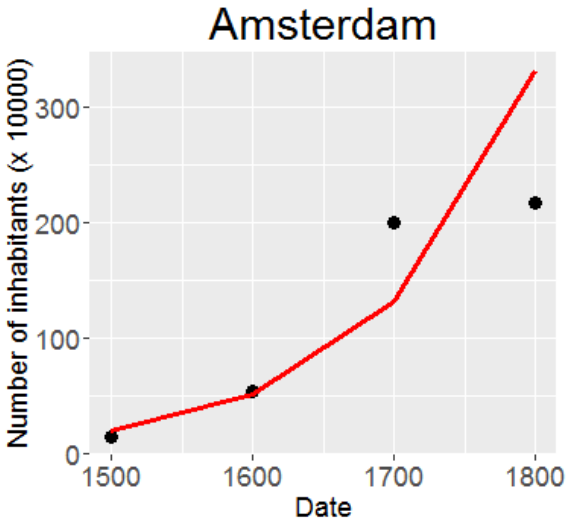
- Between languages
  - English > Dutch > German
  - French > Italian > Spanish

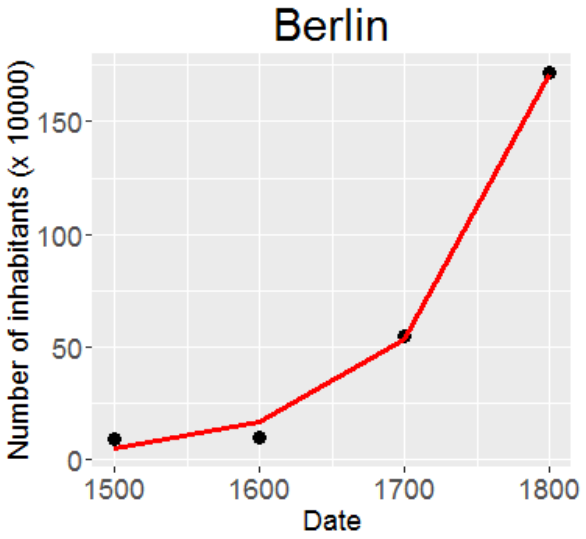
- Within languages
  - Dutch

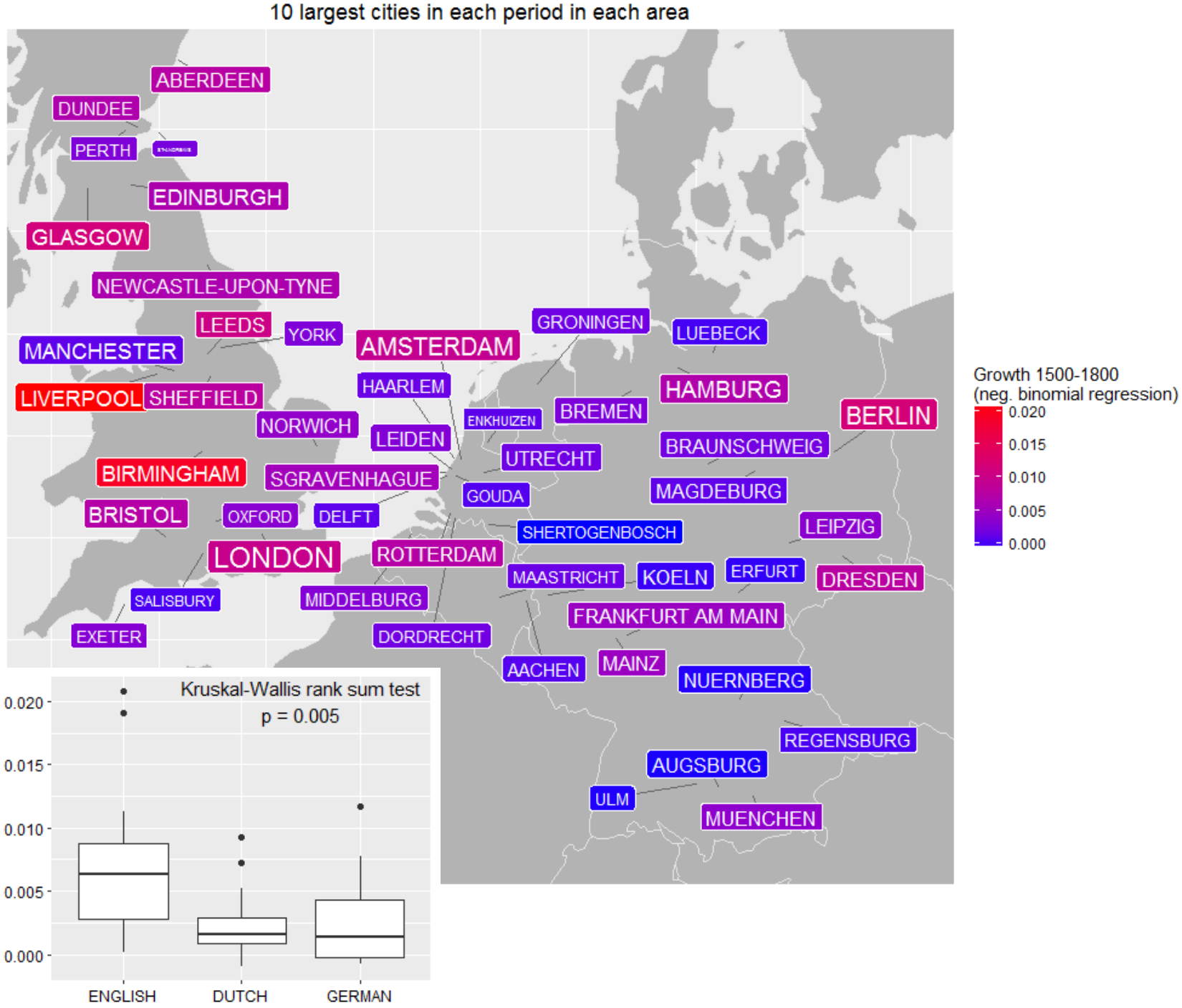

Largest city in the area
Number of inhabitants (millions)
7.5
5.0
2.5
0.0
1500
1600
1700
1800
LONDON
LONDON
LONDON
AMSTERDAM
LONDON
AMSTERDAM
BERLIN
AMSTERDAM
BERLIN
BERLIN
AMSTERDAM
BERLIN

Measuring growth: negative binomial regression








10 largest cities in each period in each area
ABERDEEN
DUNDEE
PERTH
EDINBURGH
GLASGOW
NEWCASTLE-UPON-TYNE
LEEDS
YORK
MANCHESTER
LIVERPOOL
SHEFFIELD
NORWICH
BIRMINGHAM
BRISTOL
OXFORD
DELFT
LONDON
SALISBURY
EXETER
AMSTERDAM
HAARLEM
LEIDEN
SGRAVENHAGUE
GOUDA
ROTTERDAM
MIDDELBURG
DORDRECHT
ENKHUIZEN
UTRECHT
SHERTOGENBOSCH
MAASTRICHT
AACHEN
GRONINGEN
BREMEN
LUEBECK
HAMBURG
BERLIN
BRAUNSCHWEIG
MAGDEBURG
LEIPZIG
KOELN
ERFURT
DRESDEN
FRANKFURT AM MAIN
MAINZ
NUERNBERG
REGENSBURG
AUGSBURG
ULM
MUENCHEN
Growth 1500-1800
(neg. binomial regression)
0.020
0.015
0.010
0.005
0.000
Kruskal-Wallis rank sum test
p = 0.005
0.020
0.015
0.010
0.005
0.000
ENGLISH
DUTCH
GERMAN

Case study on simplification: weak preterites

- Germanic languages have two morphological strategies for building preterites (not counting analytic perfects, *he has written a book*):

1. Strong inflection:
   - English *sing – sang*
   - Ablaut, based on Indo-European aspectual system (perfect > preterite)

PIE root *b^h_id^h-	e-grade (present)	o-grade (perfect)
Greek	*peíth-omai*	*$_2$pé-poith-a*
Gothic	*beid-an*	**baid-* (PGm ă < PIE ŏ)

2. Weak inflection
   - English *work – worked*
   - Dental suffix, based on a analytic formation [VERB + *d^heh_1-, *d^hoh_1- ('did')]

Gothic	*beid-an*	**baid-*
Dutch	*beid-en (~ †bijden)*	*beid-de*

Case study on simplification: weak preterites

- Various changes occur:
  - irregularisation (Eng. *buy* – *bought*)
  - one strong ablaut class to another (Du. *heffen* – *hief* < *hoef* (Germ. *hob*, *hub*))
  - weak to strong (Du. *vragen* – *vroeg* (vs. Germ. *fragte*))
  - strong to weak (Eng. *carve* – *carved* < *cearf* (Du. *kerfde* < *karf*))

⇨ Long-term drift, over many centuries

- Morphological simplification

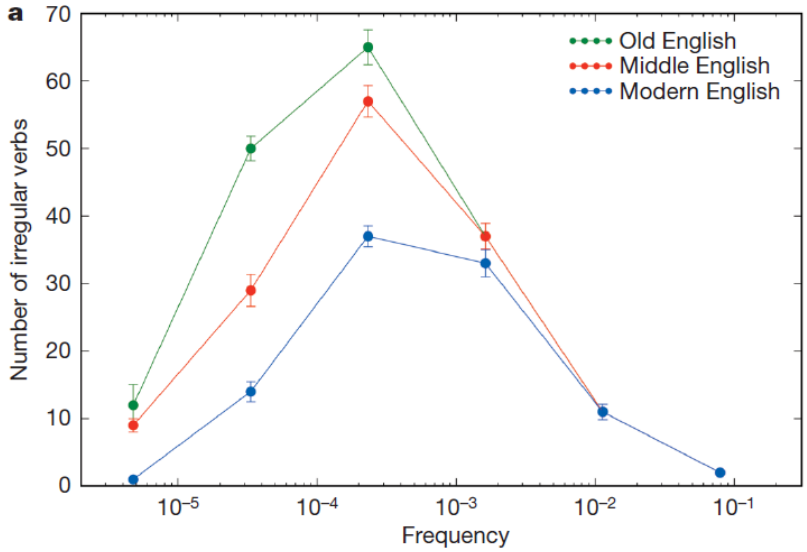
Case study on simplification: weak preterites

- Various changes occur:
  - irregularisation (Eng. *buy* – *bought*)
  - one strong ablaut class to another (Du. *heffen* – *hief* < *hoef* (Germ. *hob*, *hub*))
  - weak to strong (Du. *vragen* – *vroeg* (vs. Germ. *fragte*))
  - strong to weak (Eng. *carve* – *carved* < *cearf* (Du. *kerfde* < *karf*))

⇨ Long-term drift, over many centuries

- Follows a English > Dutch > German trend
- But also differentiated within Dutch

ENGLISH: Lieberman et al. 2007



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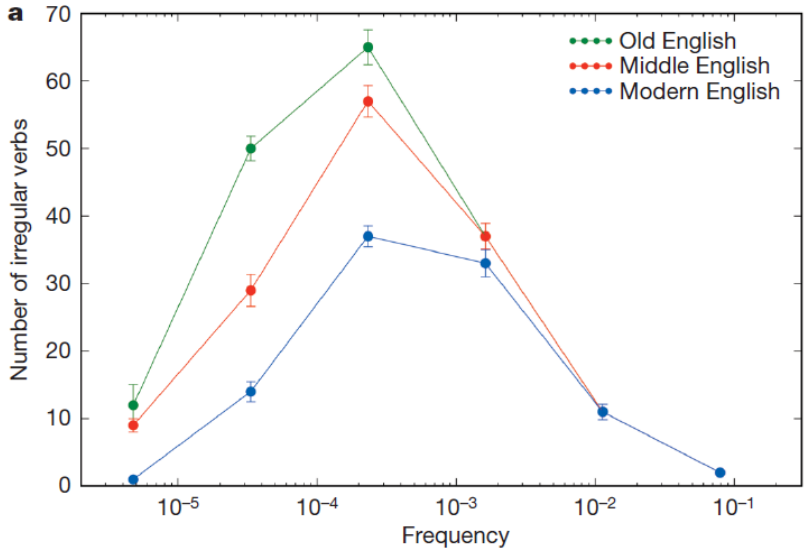
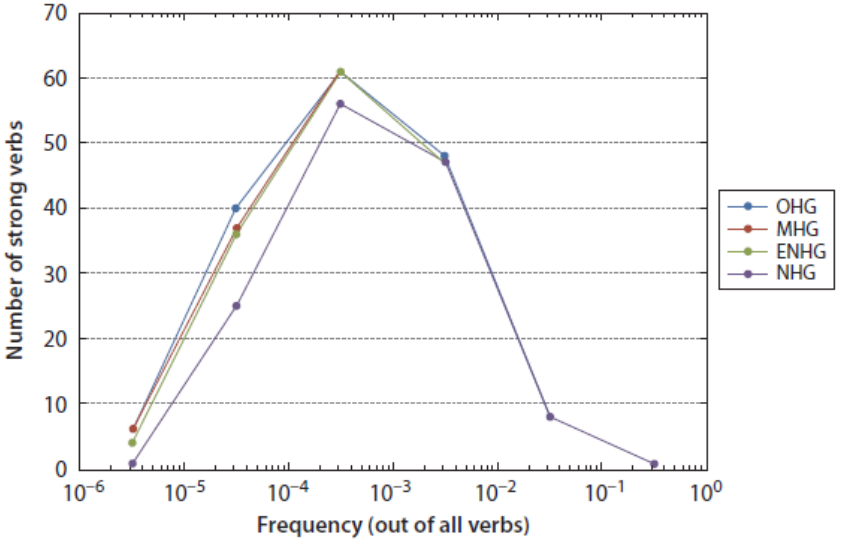


GERMAN: Carroll et al. 2012



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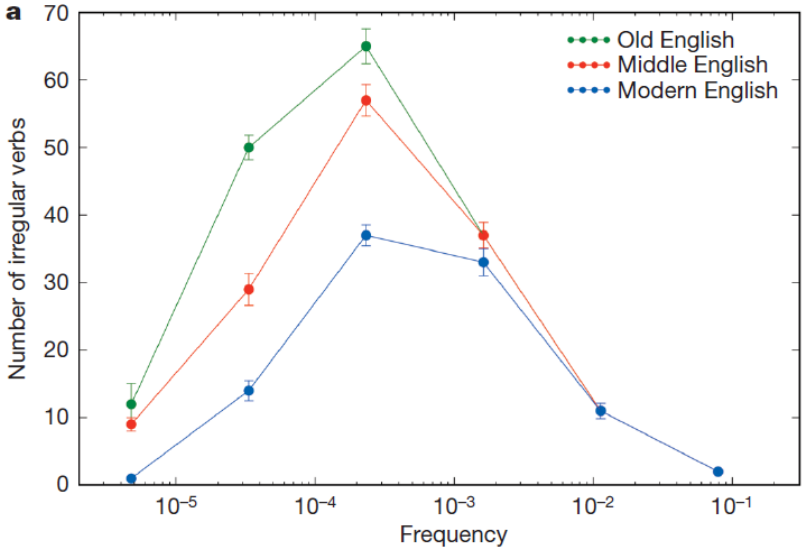

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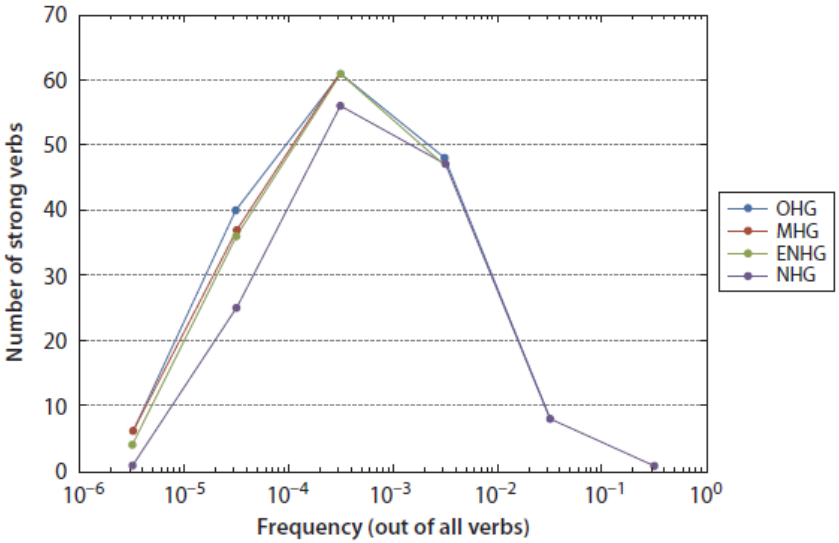
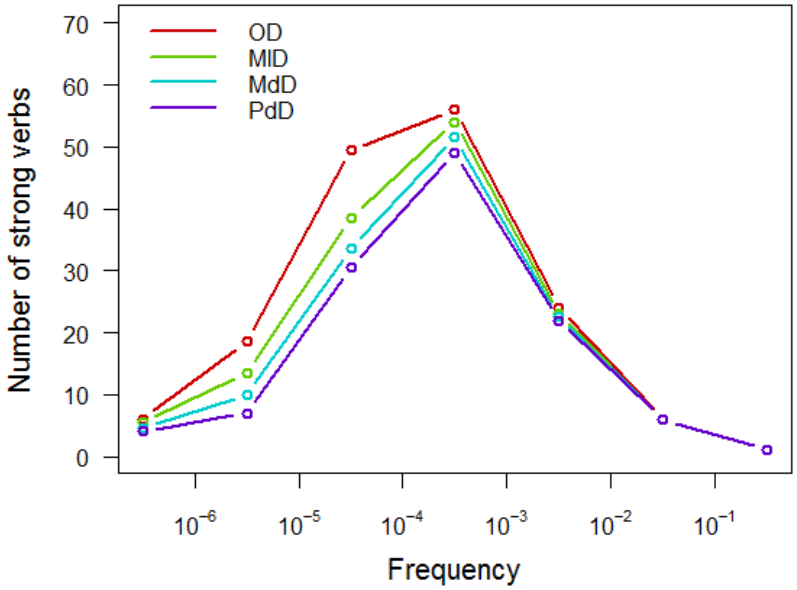
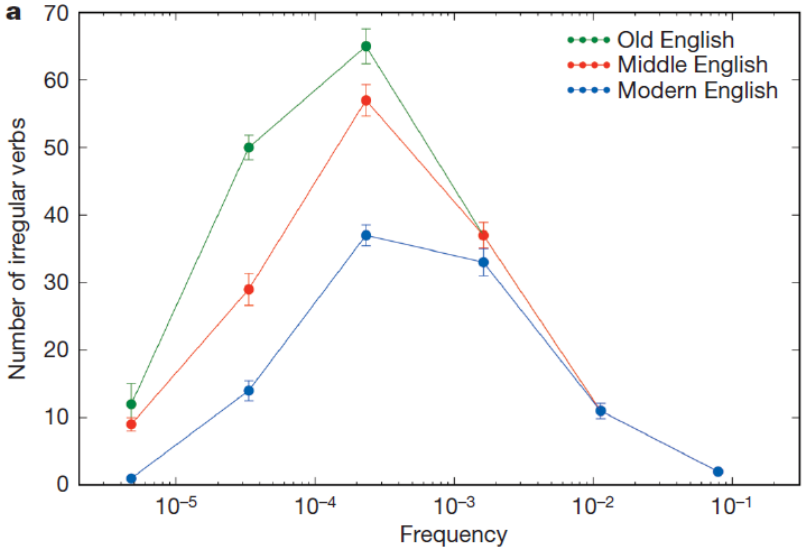


DUTCH



ENGLISH: Lieberman et al. 2007



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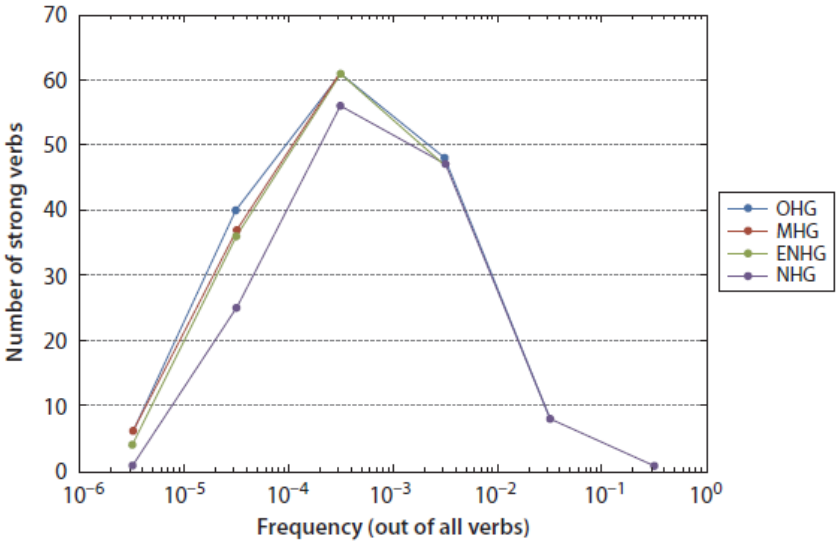

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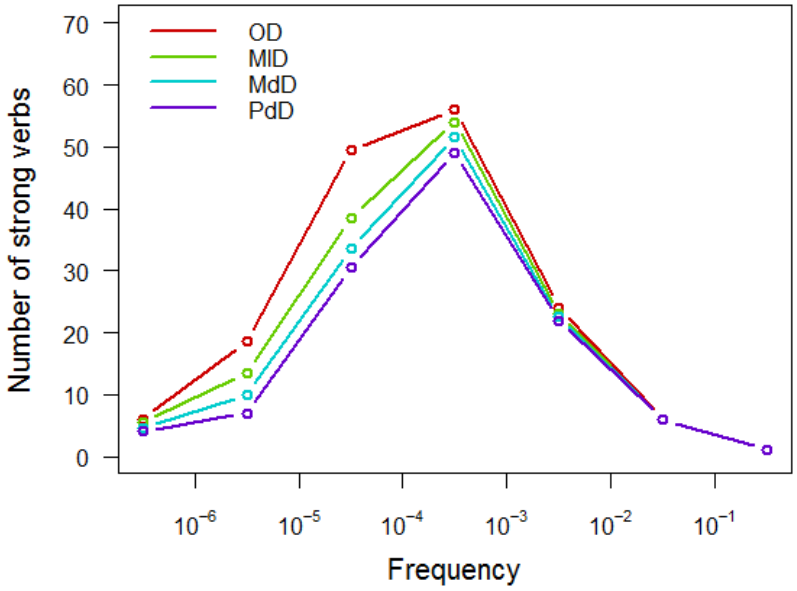
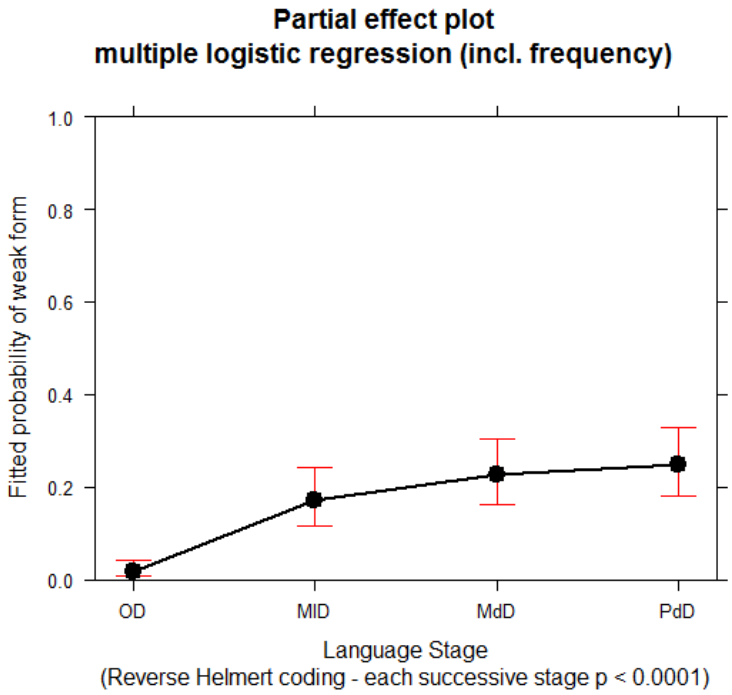


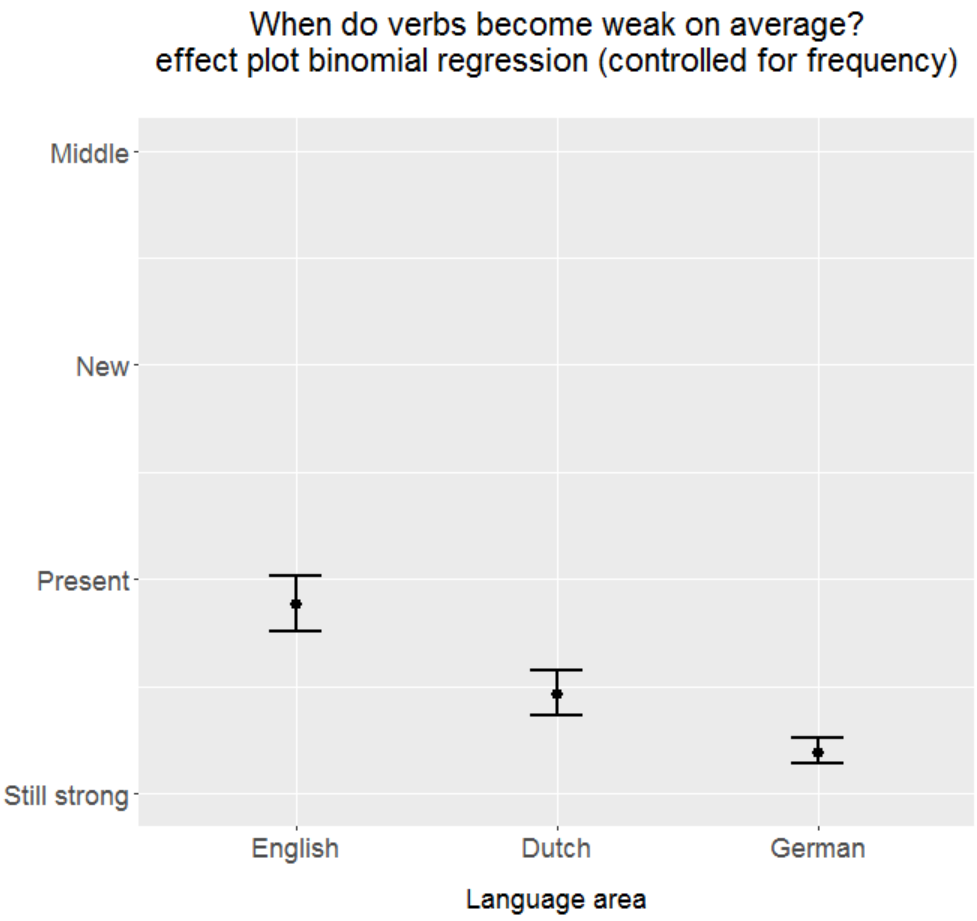


Socio-demographical factors

- Can we attribute these changes to demography?

"[A] social characteristic with structural consequences is dialect or language contact. Increased exposure to different varieties often – though not always – corresponds to patterns of morphological and other leveling or simplification (...). The ENHG period, when verb regularization picks up dramatically in the history of German, is a period notable for increased geographical mobility, in particular urbanization."
(Carroll et al. 2012: 169)

Dutch between English and German (Van Haeringen 1956)



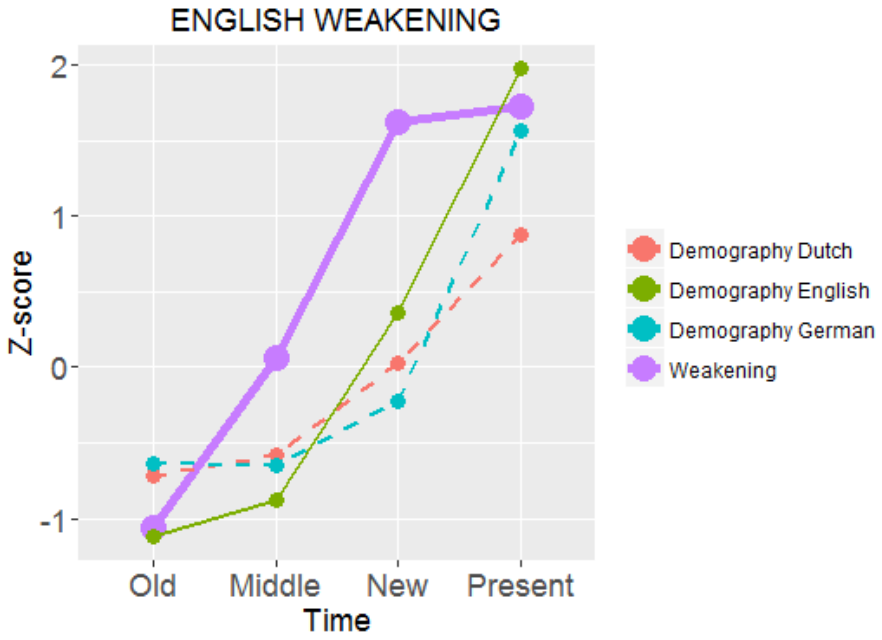
Datasets:

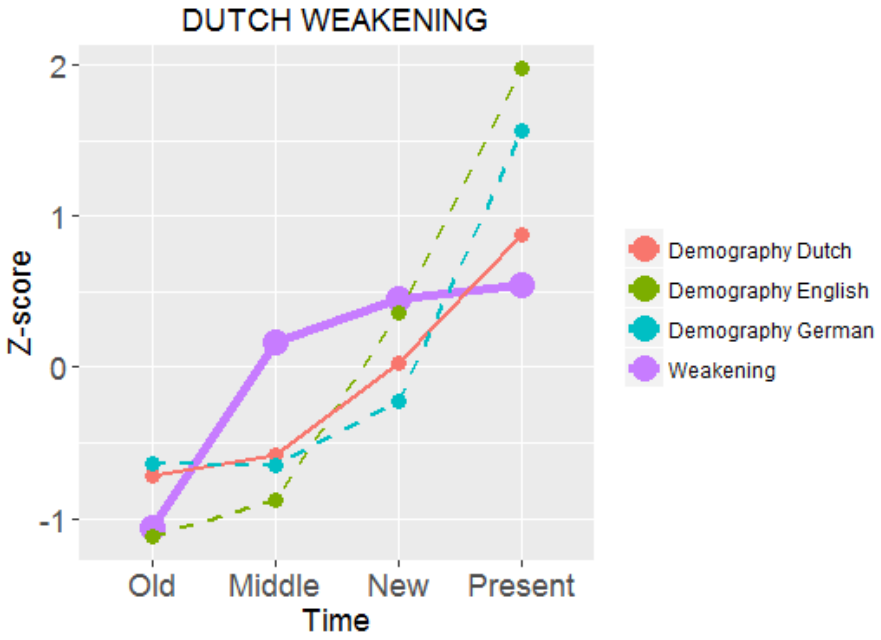
- English: Lieberman et al. (freely available)
- German: Ryan Carroll, Ragnar Svare and Joseph Salmons (shared their data)
- Dutch: Isabeau De Smet

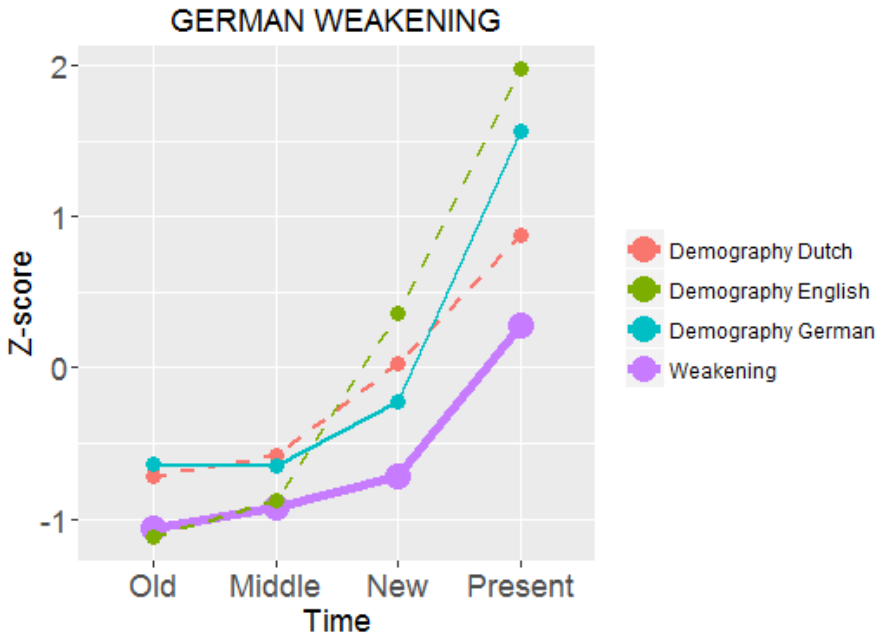
Is this correlation spurious?

- Three arguments why it is not:
  - Closer view on the dynamics of the three systems through time
  - Closer view on the within-area dynamics
  - Agent-based simulation (Pijpops et al. 2015)

- All confirm the role of demography







Pearson corr.		Weakening		
		English	Dutch	German
Demography	English	0.87 (p=0.13)	0.72 (p=0.28)	0.96 (p=0.03)
	Dutch	0.86 (p=0.31)	0.72 (p=0.28)	0.97 (p=0.03)
	German	0.69 (p=0.31)	0.56 (p=0.44)	0.99 (p=0.01)

Conclusions

- Language change is a function of historical demography (L2-speakers)
- between languages of different families
- between languages of the same family (English-Dutch-German)
- within a language (Dutch)

Acknowledgements:

Isabeau De Smet

Dirk Pijpops

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